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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/012,674	01/23/1998	MITCH PRATER	19536-706-00	2420

4372 7590 11/27/2001

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EXAMINER

SEALEY, LANCE W

ART UNIT	PAPER NUMBER
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2671

DATE MAILED: 11/27/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/012,674

Applicant(s)

Prater

Examiner

Lance Sealey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Oct 17, 2001
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-10 is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some\* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_
- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

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**DETAILED ACTION**

***Allowed and Allowable Subject Matter***

1. Claims 7-10 are still allowed.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Persistence of Vision(tm) Ray-Tracer software ("POV-Ray") in view of Penna (U.S. Pat. No. 5,905,503).

4. POV-Ray discloses:

- constructing a plurality of finite light sources within a computer animated scene, each of the finite light sources having a finite size and center (4.6.6); and
- constructing a plurality of surfaces within the scene, each surface consisting of a plurality of points (4.6.5; implied by discussion of the behavior of light around objects, which have a plurality of surfaces).

5. However, POV-Ray does not disclose approximating an illumination effect of each of the

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finite light sources by the use of a single point light source of varying intensity and location, taking into account the finite size and center of each of the finite light sources. These elements are disclosed by Penna.

6. Penna, in disclosing rendering an image using lookup tables giving illumination values for each light source by direction and distance, also discloses approximating an illumination effect of each of the finite light sources (LS; see FIG.2 and Abstract, second sentence) by the use of a single point light source of varying intensity ( $P_0$ , FIG.2) and location (implied by the first sentence of the Abstract; the Penna invention is intended to provide lighting for a 3D world represented on a 2D display screen), taking into account the finite size and center of each of the finite light sources (POV-Ray).

7. Therefore it would be obvious to combine Penna with POV-Ray point light because this would have the effect of simplifying the calculations of the illumination of an object surface (Penna, Abstract, third sentence).

8. At this point the rest of the claims in this rejection will be considered. With respect to claim 2, Penna discloses each of the finite light sources illuminating each of the points (col.5, ll.1-29).

9. Concerning claim 3, Penna discloses the approximate calculation of a light intensity and light vector direction as a function of the portion of each of the light sources which illuminates each of the points (col.5, ll.12-29).

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10. Regarding claim 4, Penna discloses calculation of the light intensity as a function of the portion of the light source which illuminates each of the points (col.5, ll.47-64);

11. With respect to claim 5, Penna discloses approximation of the light vector direction as a function of the portion of the light source which shines upon a point (col.4, l.62-col.5, l.3).

12. Finally, concerning claim 6, POV-Ray discloses that the finite light source is a sphere (light bulb, 4.6.6).

***Response to Remarks***

13. As a result of applicant's arguments, the Penna reference has been introduced in order to .

***Action is Final***

14. The applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Therefore, **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

15. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this

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final action.

*Conclusion*


16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lance Sealey whose telephone number is (703) 305-0026. The examiner can normally be reached Monday-Friday from 7:00 am to 3:30 pm EST.

17. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman, can be reached on (703) 305-9798. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

18. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Customer Service Office at (703) 306-0377.

LWS

June 18, 2001

  
MARK ZIMMERMAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600

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*Conclusion*

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